

LEE MOORE WASH  
BASIN MANAGEMENT STUDY

City of Tucson Habitat Conservation  
Plan – Technical Advisory  
Committee Meeting

April 01, 2009





## LEE MOORE WASH BASIN MANAGEMENT STUDY

# AGENDA

- Introductions
- Meeting Purpose
- Project Background & Overview
- Recommended Alternatives Review
- Draft Development Criteria Review
- Schedule/Next Steps
- Discussion



## LEE MOORE WASH BASIN MANAGEMENT STUDY

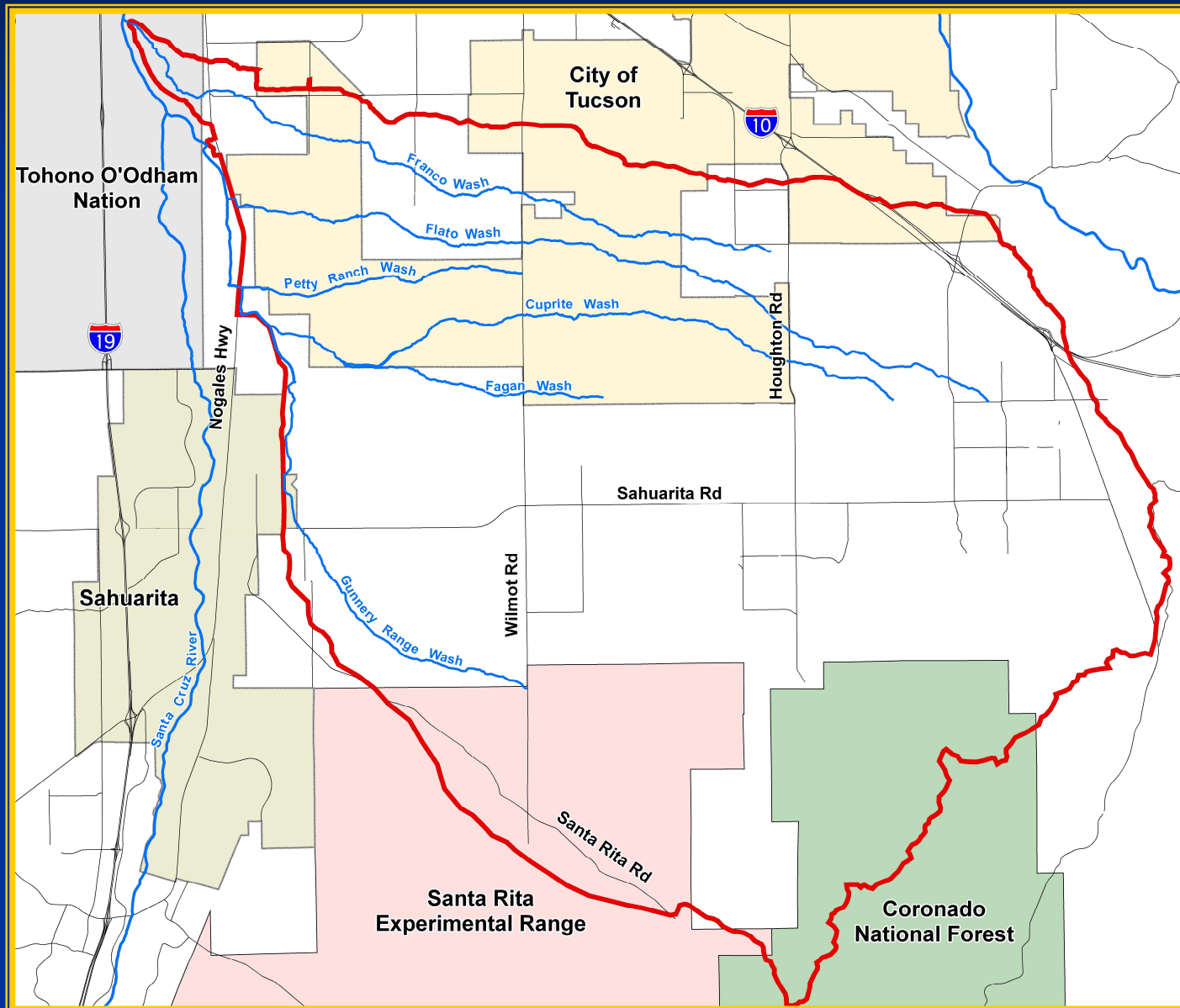
# PROJECT BACKGROUND & OVERVIEW

- History of flooding in watershed
- Both public infrastructure and residential affected
- 48% State Trust Land
- Planning for future growth
- Establish a watershed wide “backbone” drainage system
- Recommended Alternatives address multiple existing and future drainage issues

# LEE MOORE WASH BASIN MANAGEMENT STUDY



## VICINITY





## ALTERNATIVES PROCESS

- Project Approach
  - Data Collection
  - Accurate Floodplain Mapping
  - Issues Identification
  - Solutions by Alternatives Evaluation
  - Recommended Alternatives from Alternatives Evaluation
  - Significant Stakeholder & Public Involvement

## LEE MOORE WASH BASIN MANAGEMENT STUDY

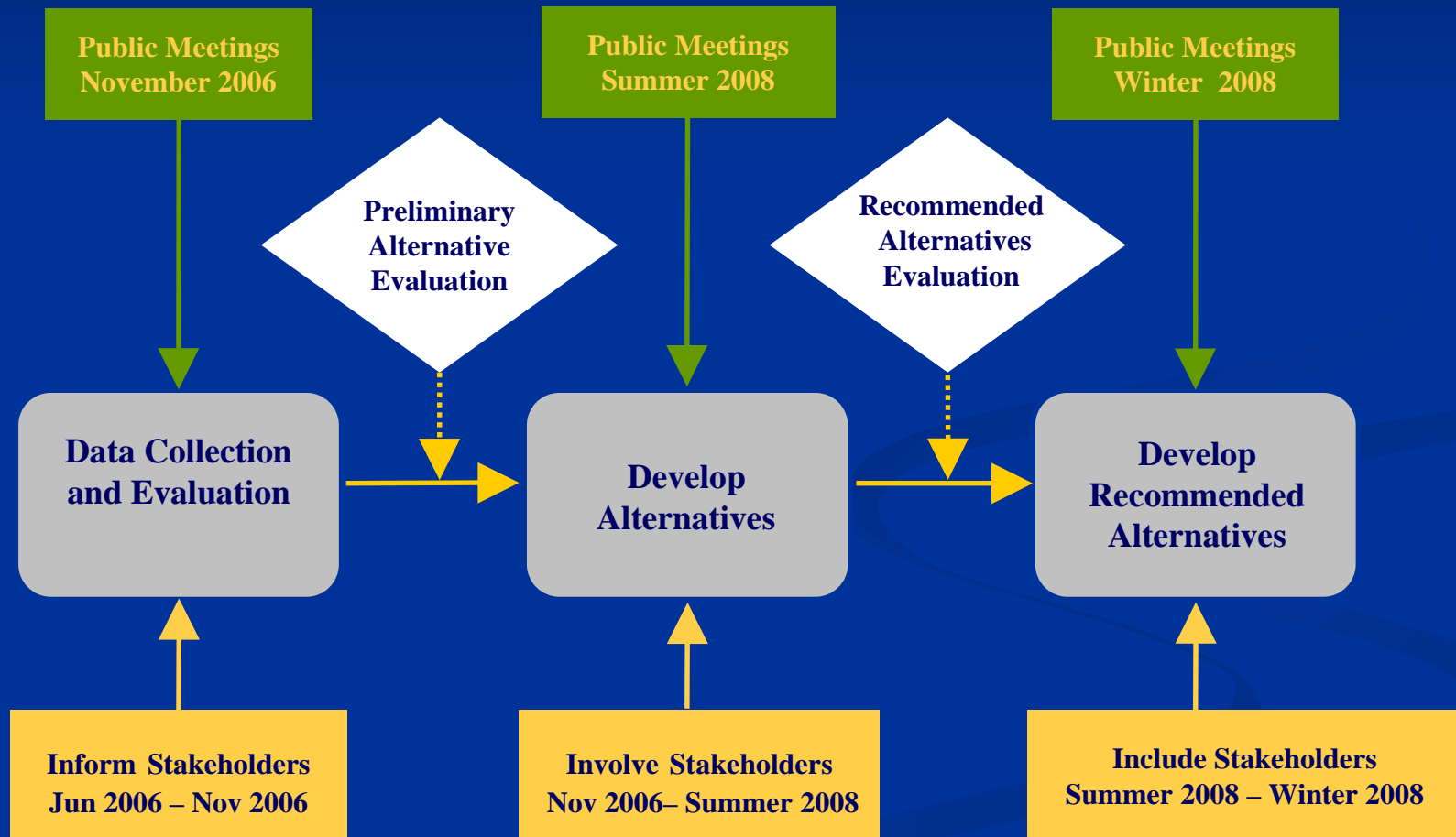
# STAKEHOLDER PLAN



## LEE MOORE WASH BASIN MANAGEMENT STUDY



# ALTERNATIVES DEVELOPMENT PROCESS





## ALTERNATIVES PROCESS

- **Recommended Alternative**
  - Primarily selected based on best scoring & cost ranking similar to a “benefit/cost” ratio
  - Is a combination of Structural and Non-Structural Alternatives
  - Addresses multiple existing and future flooding/drainage problems

# LEE MOORE WASH BASIN MANAGEMENT STUDY

# ALTERNATIVES PROCESS

Planning Area	Alternative	Public Safety and Flood Hazard Mitigation	Implementation	Environmental Resources	Sustainability	Planning and Infrastructure	Total Score	Probable Construction Cost (\$)	Total Score divided by probable construction cost	Total score x 10000
	Weighted Value	3.5	1.5	1.5	1	2.5	10			
Area Wide Alternatives	EXISTING PROBLEM AREAS									
	Existing Problem Statement: 25 drainage complaints within unplatted areas north of Sahuarita Rd, 60% related to access and flooding issues									
	Floodproofing	97	90	70	52	125	434	\$180,000	0.002412	24.1
	20 drainage complaints along Wilcox corridor unplatted areas; 35% related to access and flooding issues									
	Floodproofing	97	90	70	52	125	434	\$510,000	0.000851	8.5
	35 drainage complaints within unplatted areas east of Wilcox Rd, 40% related to access issues									
	Floodproofing	97	90	70	52	125	434	\$240,000	0.001808	18.1
	Existing Stock Pond/Diversion Structures									
	Ensure maint & operation of stock ponds/diversion structures; study & analysis with future development									
	No Action	51	79	73	68	158	428	\$2,625,000	0.000163	1.6
	74	68	70	46	125	383				
Enhance Public Education and Outreach										
Public Education and Outreach	83	112	70	54	119	438	\$30,000	0.014600	146.0	
Flooding within unplatted residential areas										
Improvement District	113	89	75	60	143	470				
Franco Flato Summit Area Alternatives	EXISTING PROBLEM STATEMENT: Old Vail Road - Franco Wash 100-yr flowdepth 7-8 ft									
	Automatic Barricade Control	84	101	70	54	119	427	\$300,000	0.001422	14.2
	Culvert	93	98	41	42	150	414	\$1,718,750	0.000241	2.4
	INSTALL BARRICADES AS INTERIM SOLUTION - CULVERT POTENTIAL PERMANENT LONG-TERM STRATEGY FOR ALL-WEATHER ACCESS									
	Summit Street - Franco Wash 100-yr flowdepth 3-4 ft									
	Automatic Barricade Control	84	101	70	54	119	427	\$300,000	0.001422	14.2
	Flooding along Franco Wash-potential flooding of 45-50 structures within Summit Area									
	Public Education and Outreach	83	112	70	54	119	438	\$30,000	0.014600	146.0
	DEVELOP PROGRAM TO INFORM & EDUCATE RESIDENTS SITUATED WITHIN IDENTIFIED LOCAL FLOODPLAINS									
	Flooding along Summit Wash-potential flooding of 30-35 structures from County Club to Nogales Hwy									
	Public Education and Outreach	83	112	70	54	119	438	\$30,000	0.014600	146.0
	DEVELOP PROGRAM TO INFORM & EDUCATE RESIDENTS SITUATED WITHIN IDENTIFIED LOCAL FLOODPLAINS									
	Regional detention basin	118	86	92	60	98	462	\$513,110	0.000981	9.8
	Additional flooding along Franco Tributary south of Old Vail Rd									
	Public Education and Outreach	83	112	70	54	119	438	\$30,000	0.014600	146.0
	DEVELOP PROGRAM TO INFORM & EDUCATE RESIDENTS SITUATED WITHIN IDENTIFIED LOCAL FLOODPLAINS									
	Regional detention basin	118	86	92	60	98	462	\$578,920	0.000781	7.8
	Flooding along Flato at Old Nogales Hwy									
	Public Education and Outreach	83	112	70	54	119	438	\$30,000	0.014600	146.0
	FLAP	256	67	98	57	145	623	\$1,482,000	0.000421	4.2
	Maintenance of Lee Moore Channel Bank Protection/Bank Erosion									
	Bank Stabilization	132	94	82	46	170	524	\$3,445,200	0.000152	1.5
	COST TO BE RE-EVALUATED TO DETERMINE IF ESTIMATE MAY BE LOW									
	Franco Wash at Houghton Rd - >1,000 ft, depth > 1 ft									
	Automatic Barricade Control	84	101	70	54	119	427	\$300,000	0.001422	14.2
	Culvert	71	115	41	42	150	420	\$1,039,750	0.000384	3.8
	INSTALL BARRICADES AS INTERIM SOLUTION - CULVERT AT FRANCO POTENTIALLY PART OF LONG-TERM STRATEGY FOR ALL-WEATHER ACCESS									
	Rato Wash at Houghton Rd-depth>1ft									
	Automatic Barricade Control	84	101	70	54	119	427	\$300,000	0.001422	14.2
	Culverts	71	115	41	42	150	420	\$3,125,000	0.000134	1.3
INSTALL BARRICADES AS INTERIM SOLUTION - CULVERTS AT FLATO PART OF LONG-TERM STRATEGY FOR ALL-WEATHER ACCESS										
Stock ponds upstream of Wentworth-10 interchange-potential flooding at interchange with failure										
Ensure maint & operation of stock ponds/diversion structures; study & analysis with future development	51	79	73	68	158	428	\$200,000	0.002141	21.4	
Utilize as regional detention basins										
INSPECTION AND MAINTENANCE MAY BE AN INITIAL STRATEGY- ADDITIONAL ANALYSIS AND STUDY REQUIRED TO DETERMINE STRUCTURES THAT MAY BEST SERVE AS REGIONAL FACILITIES	94	69	92	60	175	481	\$2,611,000	0.000184	1.8	
Stock Ponds/diversions along Flato main corridor-potential diversion of flow north into Franco watershed										
Ensure maint & operation of stock ponds/diversion structures; study & analysis with future development	51	79	73	68	158	428	\$75,000	0.005710	57.1	
Utilize as regional detention basins										
INSPECTION AND MAINTENANCE MAY BE AN INITIAL STRATEGY- ADDITIONAL ANALYSIS AND STUDY REQUIRED TO DETERMINE STRUCTURES THAT MAY BEST SERVE AS REGIONAL FACILITIES	94	69	92	60	175	481	\$978,125	0.000491	4.9	
New Tucson all-weather access issues at several crossings, undersized culverts at several crossings										
Maintain culverts, upgrade culvert size	57	108	86	50	125	426	\$2,415,750	0.000176	1.8	
Remove access points	109	88	92	50	125	464	\$545,600	0.000890	8.5	
Impacts of stock ponds/diversion structures south of Sahuarita Rd and New Tucson area										
Ensure maint & operation of stock ponds/diversion structures; study & analysis with future development	51	79	73	68	189	460	\$250,000	0.001838	18.4	
Utilize as regional detention basins										
INSPECTION AND MAINTENANCE MAY BE AN INITIAL STRATEGY- ADDITIONAL ANALYSIS AND STUDY REQUIRED TO DETERMINE STRUCTURES THAT MAY BEST SERVE AS REGIONAL FACILITIES	74	66	92	66	194	471	\$3,263,750	0.000144	1.4	

# LEE MOORE WASH BASIN MANAGEMENT STUDY

# ALTERNATIVES PROCESS

Culprite Fagan/Party Ranch Areas Alternatives	Existing Problem Statement: FICO Channel lacks capacity to convey flow north, breakout/flooding to west									
	No Action	74	68	70	50	125	387			
	Sahuarita Rd-all-weather access limited from east near Wentworth Rd to Houghton									
	Culverts	83	115	41	42	150	431	\$1,306,875	0.000330	3.3
	Maintain culverts, upgrade culvert size	57	101	86	50	150	444	\$357,000	0.001245	12.4
	MAINTENANCE AND/OR UPGRADE OF EXISTING STRUCTURES INITIAL STRATEGY - ADDITIONAL NEW CULVERTS LONG-TERM STRATEGY FOR ALL WEATHER ACCESS									
	Approx. 2 miles of Sahuarita Rd - Houghton Rd to Rita Rd alignment									
	Culverts	83	115	41	42	150	431	\$4,235,000	0.000102	1.0
	Maintain culverts, upgrade culvert size	57	101	86	50	150	444	\$15,000	0.029630	296.2
	MAINTENANCE AND/OR UPGRADE OF EXISTING STRUCTURES INITIAL STRATEGY - ADDITIONAL NEW CULVERTS LONG-TERM STRATEGY FOR ALL WEATHER ACCESS									
Sycamore Canyon & Gunney Range Areas Alternatives	Houghton Rd-all-weather access limited from north									
	Automatic Barricade Control	84	101	70	54	119	427	\$300,000	0.001422	14.2
	BARRICADE CONTROLS AS AN INTERIM SOLUTION - WOULD REQUIRE MORE THAN TWO LOCATIONS AS REGIONAL ALTERNATIVE									
	Provide all weather access	71	123	38	53	125	410	\$6,658,596	0.000062	0.6
	Culverts	83	108	41	42	150	424	\$5,326,875	0.000080	0.8
	ALL WEATHER ACCESS ASSUMES COST OF CULVERTS AND INCIDENTAL CROSSINGS/ADDITIONAL COSTS ASSOCIATED WITH TWO LANE ROADWAY - I-10 TO SAHUARITA RD									
	Houghton, Sahuarita Area-flooding/erosion issues									
	No Action	74	68	70	50	125	387			
	Sahuarita Rd-Rita Rd alignment to Nogales hwy									
	Culverts	83	115	41	42	150	431	\$9,855,625	0.000049	0.5
Maintain culverts, upgrade culvert size	57	101	86	50	150	444	\$967,500	0.000459	4.6	
MAINTENANCE AND/OR UPGRADE OF EXISTING STRUCTURES INITIAL STRATEGY - ADDITIONAL NEW CULVERTS LONG-TERM STRATEGY FOR ALL WEATHER ACCESS										
Undersized/clogged culverts in Sycamore Canyon Estates south of Sahuarita Rd										
Maintain culverts, upgrade culvert size	57	101	86	50	125	419	\$27,000	0.015530	155.3	
No Action	74	68	70	50	125	387				
Complaints about integrity of berm along Columbus Blvd, north of Davon, east of Irving										
No Action	74	68	70	50	125	387				
Sahuarita, Delgado, Davon: FICO channel-lack of capacity/sedimentation causes residential flooding										
FLAP	256	70	86	57	145	614	\$23,062,806	0.000027	0.3	
Regional detention basins	47	85	92	60	175	459	\$14,881,300	0.000031	0.3	
COST ASSUMES FACILITIES AT TWO LOCATIONS										
Construct 100-year channel	59	103	70	38	138	407	\$2,541,000	0.000180	1.8	

# LEE MOORE WASH BASIN MANAGEMENT STUDY



## ALTERNATIVES PROCESS

Planning Area	Alternative	Public Safety and Flood Hazard Mitigation	Implementation	Environmental Resources	Sustainability	Planning and Infrastructure	Total Score	Probable Construction Cost	Total Score divided by probable construction cost	Total score x 10000
	Weighted Value	3.5	1.5	1.5	1	2.5	10			
Area Wide Alternatives	<b>FUTURE PROBLEM AREAS</b>									
	Future Problem Statement: Develop Backbone Drainage Infrastructure									
	Delineate and preserve flow corridors	210	114	82	73	175	654	\$504,500,000		
	Regional detention basins	125	85	96	80	175	540	\$127,692,675	0.000004	0.04
	Rules of Development	174	101	135	64	125	599			
	Identify and Disclose Flood Hazard Information									
	Delineate additional FEMA floodplains	193	93	92	51	138	586	\$1,665,000	0.000340	3.4
Franco Flato Summit Area Alternatives	Public Education and Outreach	83	112	70	51	125	441	\$30,000	0.014692	146.9
	Future Problem Statement: 50% of Wilmot Rd & Kolb Rd alignments are impacted by defined floodplain areas									
	Rules of development	174	101	96	64	125	580			
	Realign Wilmot Rd	79	99	96	57	170	501	-\$606,061	-0.000827	-8.3
	COST REPRESENTS BENEFIT IN FORM OF REDUCED LENGTH & CONSEQUENT ROADWAY COST									
	Rules of development	174	101	96	64	125	580			
	Realign Country Club Rd	79	99	96	57	170	501	-\$1,060,606	-0.000472	-4.7
Cuprite/Fagan Petty Ranch Area Alternatives	COST REPRESENTS BENEFIT IN FORM OF REDUCED LENGTH & CONSEQUENT ROADWAY COST									
	Rules of development	174	101	96	64	125	580			
	Access to private parcel near Country Club/Pima Mine Rd									
	Relocate intersection	62	99	91	55	158	463	\$1,136,364	0.000408	4.1
	Intersection at Dawn Rd & I-10 located within flood-prone area									
	COST REPRESENTS INCREASED LENGTH OF ROADWAY TO AVOID FLOOD HAZARD AREA - COST COULD BE LESS WHEN OFFSET BY REDUCED DREQUISITE DRAINAGE INFRASTRUCTURE									
	Existing Problem Statement: Proposed Dawn Rd alignment swings south into flood hazard area, +/- 1/3 mile flow depths >0.5ft									
Sycamore Canyon & Gunney/Panor Area Alternatives	Rules of development	174	101	96	64	125	580			
	Realign roadway	79	99	101	61	170	510	-\$757,576	-0.000673	-6.7
	COST REPRESENTS BENEFIT IN FORM OF REDUCED LENGTH & CONSEQUENT ROADWAY COST									
	Rules of development	174	101	96	64	125	580			
	Realign Wilmot Rd	79	99	90	57	170	495	-\$3,030,303	-0.000163	-1.6
	COST REPRESENTS BENEFIT IN FORM OF REDUCED LENGTH & CONSEQUENT ROADWAY COST									
	Remove roadway section	74	63	115	65	63	370	-\$10,984,848	-0.000034	-0.3
Sycamore Canyon & Gunney/Panor Area Alternatives	COST REPRESENTS BENEFIT IN FORM OF REDUCED LENGTH & CONSEQUENT ROADWAY COST									
	No Action	74	68	61	44	125	371			
	Pima Mine Rd-from Houghton to Wilmot is within shallow sheet flow, divert flow to Cuprite watershed									
	NO ACTION ASSUMES ROADWAY BUILT AS PROPOSED IN SE ARTERIAL STUDY - DRAINAGE MAINTAINED PER EXISTING FLOW PATTERNS									
	Hook M Ranch property-40-50% of property impacted by shallow sheet flow									
	Delineate and preserve flow corridors	210	114	82	73	170	649	\$28,900,000		
	Rules of development	174	101	96	64	125	580			
Sycamore Canyon & Gunney/Panor Area Alternatives	Wilmot Rd & Dawson Rd proposed alignments situated in areas dominated by shallow sheet flow									
	No Action	74	68	49	125	365				
	Sycamore Canyon Blocks C-G-plan platted, currently undeveloped, flood hazard areas fairly contained									
Sycamore Canyon & Gunney/Panor Area Alternatives	Delineate and preserve flow corridors	210	114	82	73	170	649			
	Rules of development	174	101	96	64	125	580			



## PLANNING AREAS

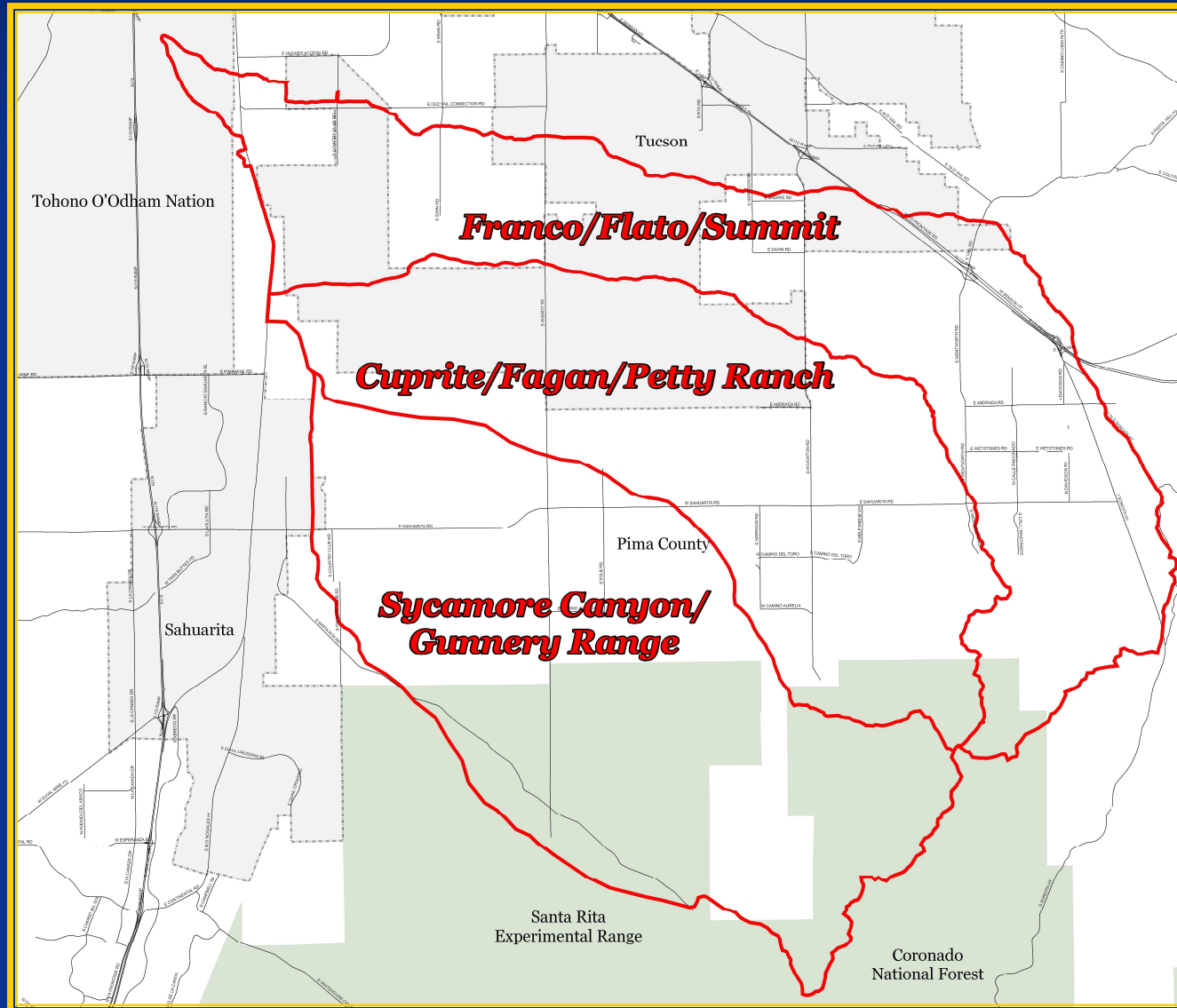
### ■ Planning Areas

- Sub-watershed
- Land Use
- Hydraulic/Flooding Similarity
- Area-Wide Lee Moore Wash Watershed
- Franco/Flato/Summit Area
- Cuprite/Fagan/Petty Ranch Area
- Sycamore Canyon/Gunnery Range Area

## LEE MOORE WASH BASIN MANAGEMENT STUDY



# PLANNING AREAS



## PROBLEM IDENTIFICATION

### ■ Area-Wide

- Undersized culvert crossings
- Lack of all-weather roadway access
- Roadway flooding
- Stock pond failure potential
- Floodplain encroachments/obstructions

## PROBLEM IDENTIFICATION

- **Area-Wide**
  - **Lack of comprehensive drainage systems**
  - **Shallow sheet flooding**
  - **Localized erosion/sedimentation**
  - **Drainage Complaints**
  - **Diversion structures**

## ALTERNATIVES DESCRIPTION

- **Structural Alternatives Included**
  - Flood proofing
  - Regional detention basins
  - Bank stabilization
  - Conveyance channels/Channelization
  - Stock Pond Mitigation
  - Diversion channels/structures
  - Bridges
  - Culverts
  - Road Improvements/Realignment

## LEE MOORE WASH BASIN MANAGEMENT STUDY

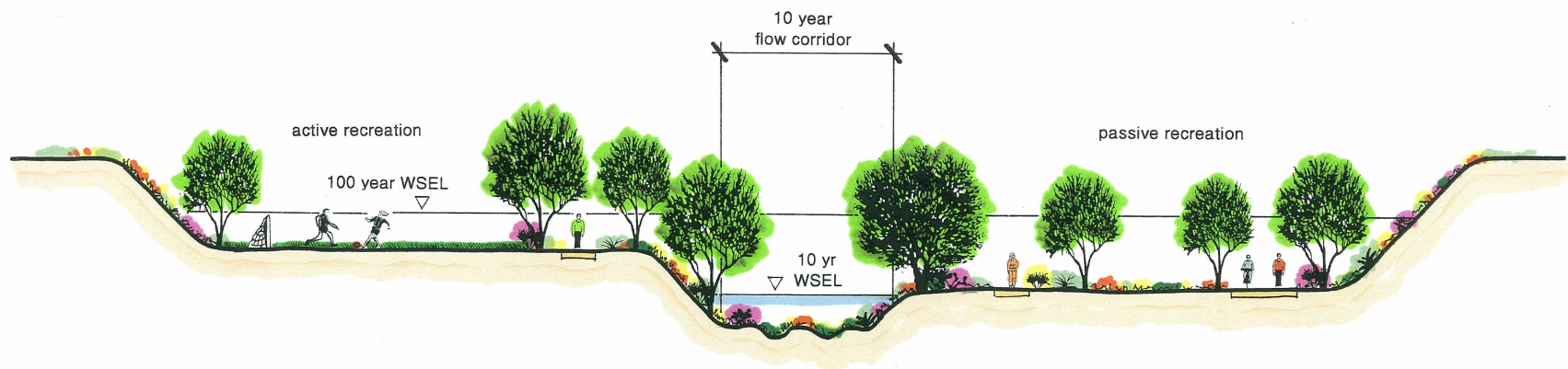


# ALTERNATIVES DESCRIPTION



## LEE MOORE WASH BASIN MANAGEMENT STUDY

# ALTERNATIVES DESCRIPTION



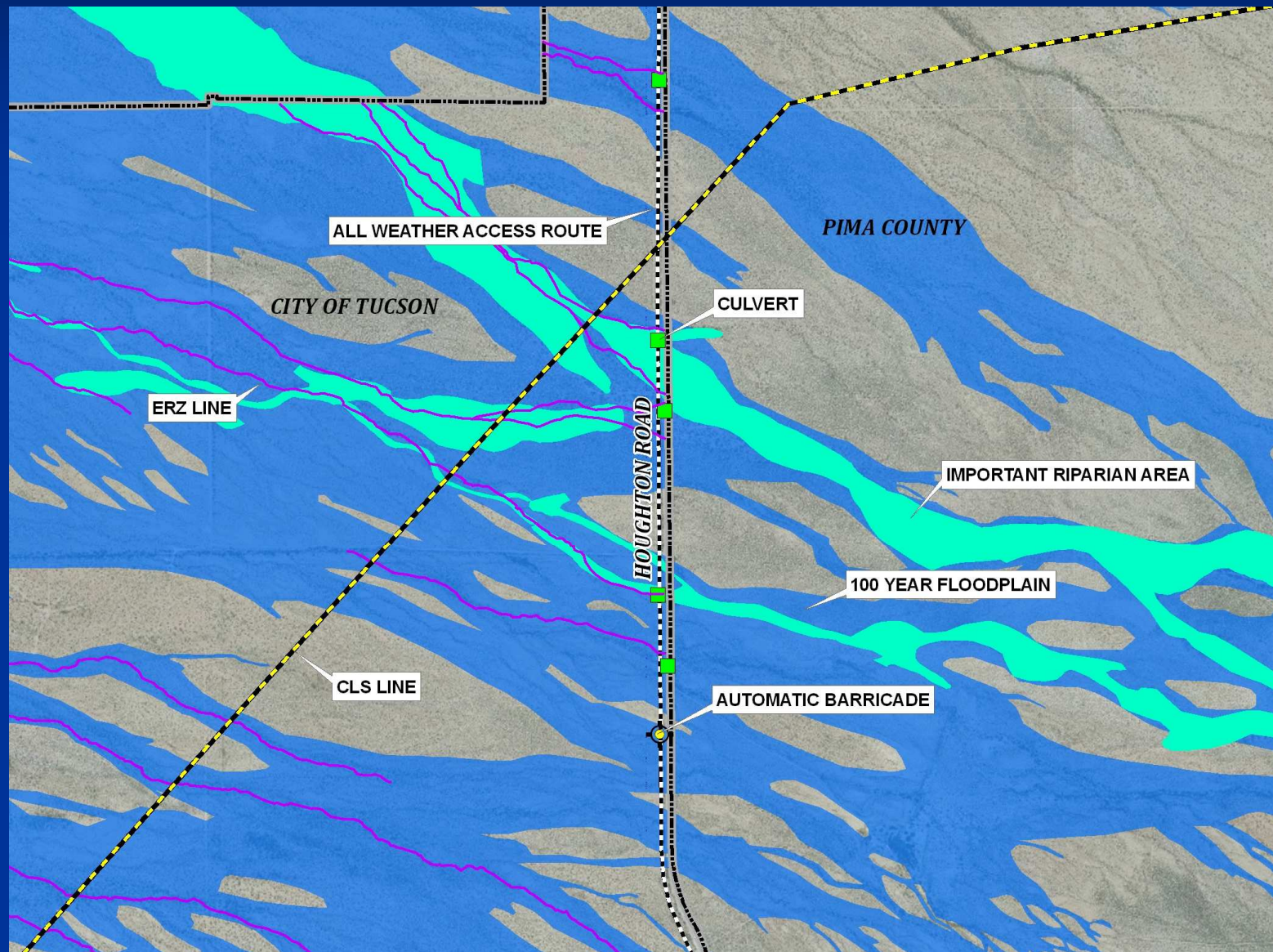
Multi-Use Regional Detention Basin  
(Franco Wash)

NTS

## LEE MOORE WASH BASIN MANAGEMENT STUDY



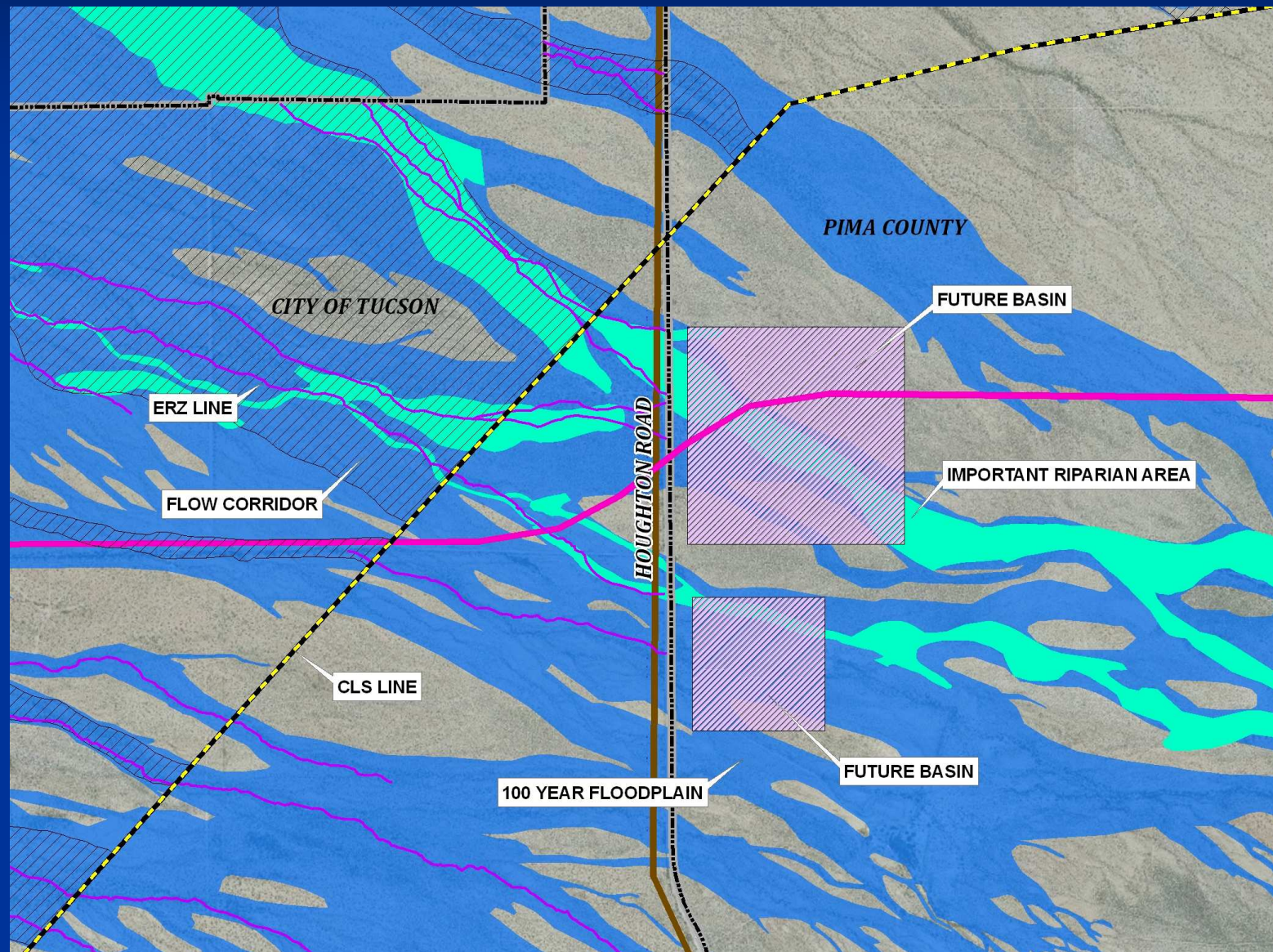
# RECOMMENDED ALTERNATIVES



## LEE MOORE WASH BASIN MANAGEMENT STUDY



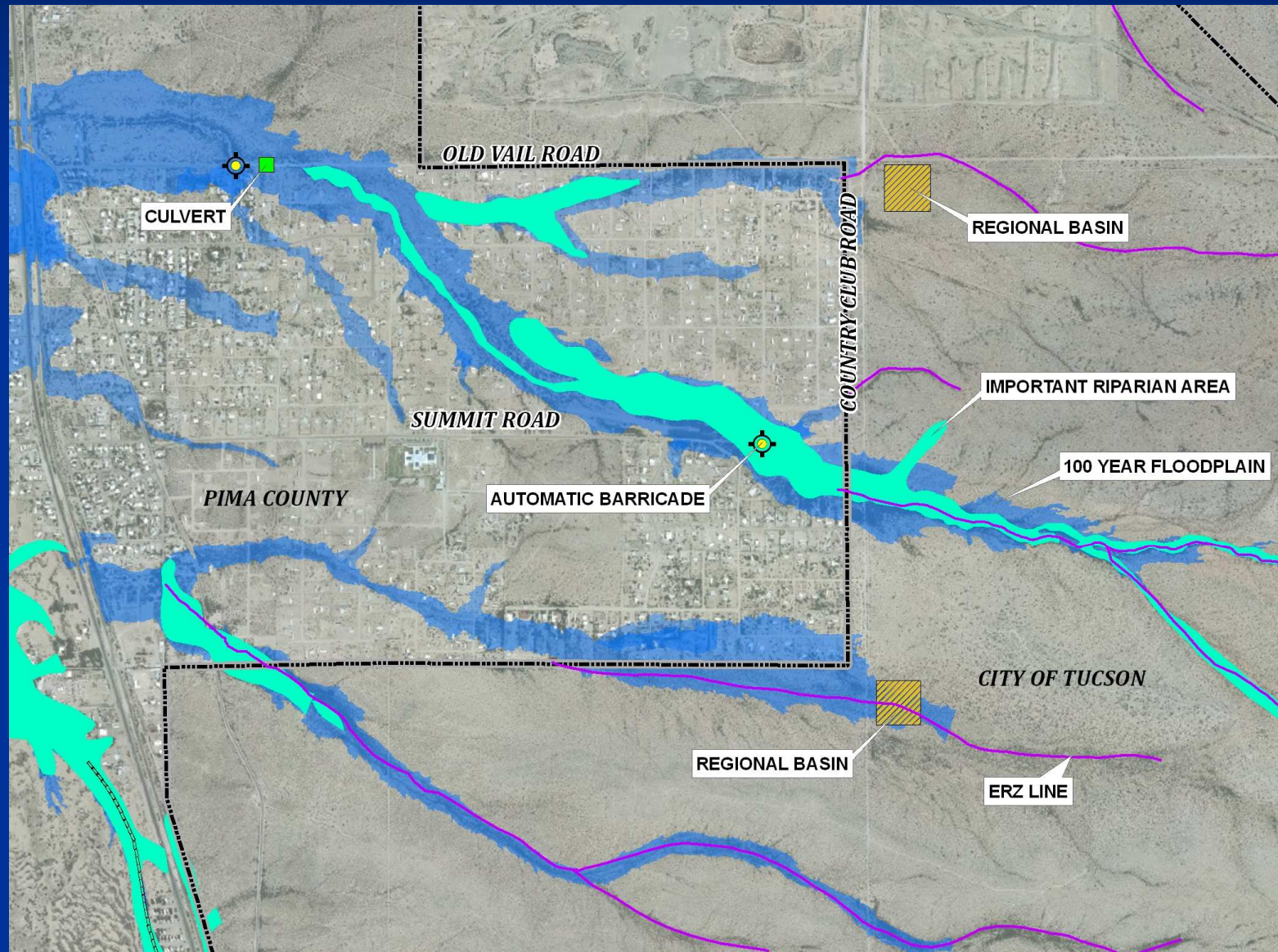
# RECOMMENDED ALTERNATIVES



## LEE MOORE WASH BASIN MANAGEMENT STUDY



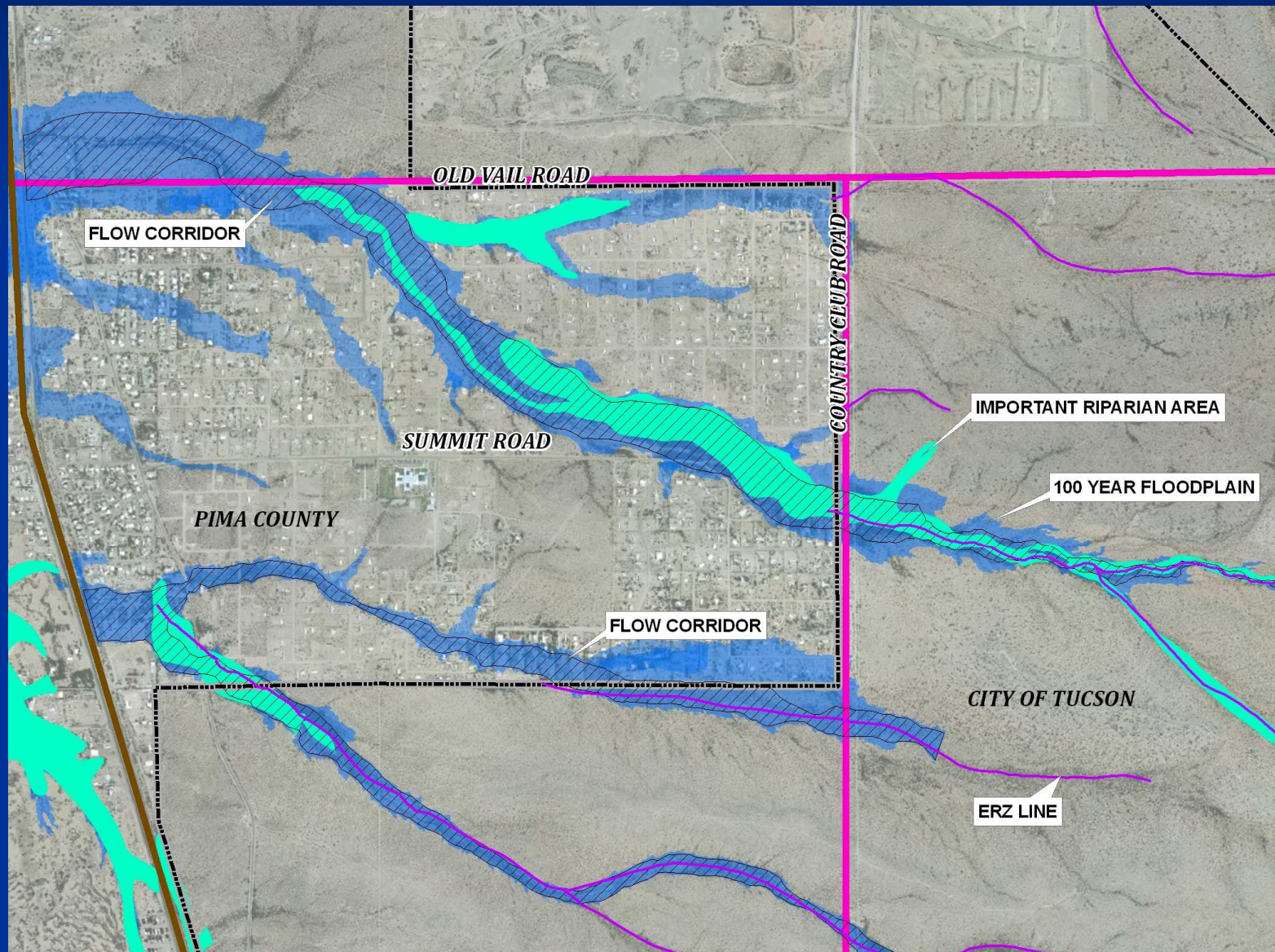
# RECOMMENDED ALTERNATIVES



## LEE MOORE WASH BASIN MANAGEMENT STUDY



# RECOMMENDED ALTERNATIVES





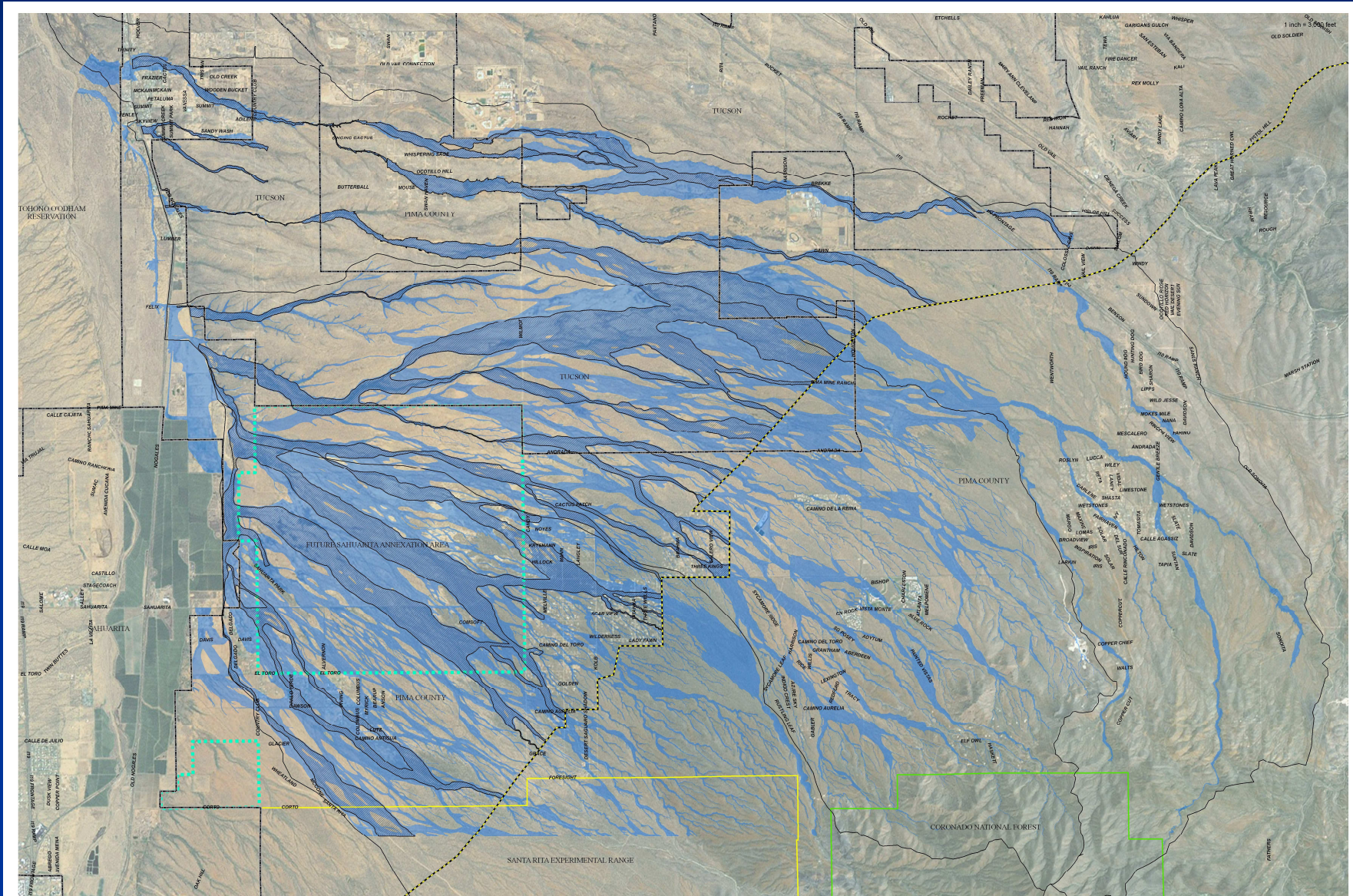
## ALTERNATIVES DESCRIPTION

### ■ Non-Structural Alternatives

- Delineate additional floodplains &/or floodways
- Delineate/preserve flow corridors
- Utilize existing floodplain regulations
- Floodplain Land Acquisition Program (FLAP)
- Development Criteria
- Flood warning systems
- Public education & outreach
- Identify & regulate erosion hazard setbacks
- Flood insurance

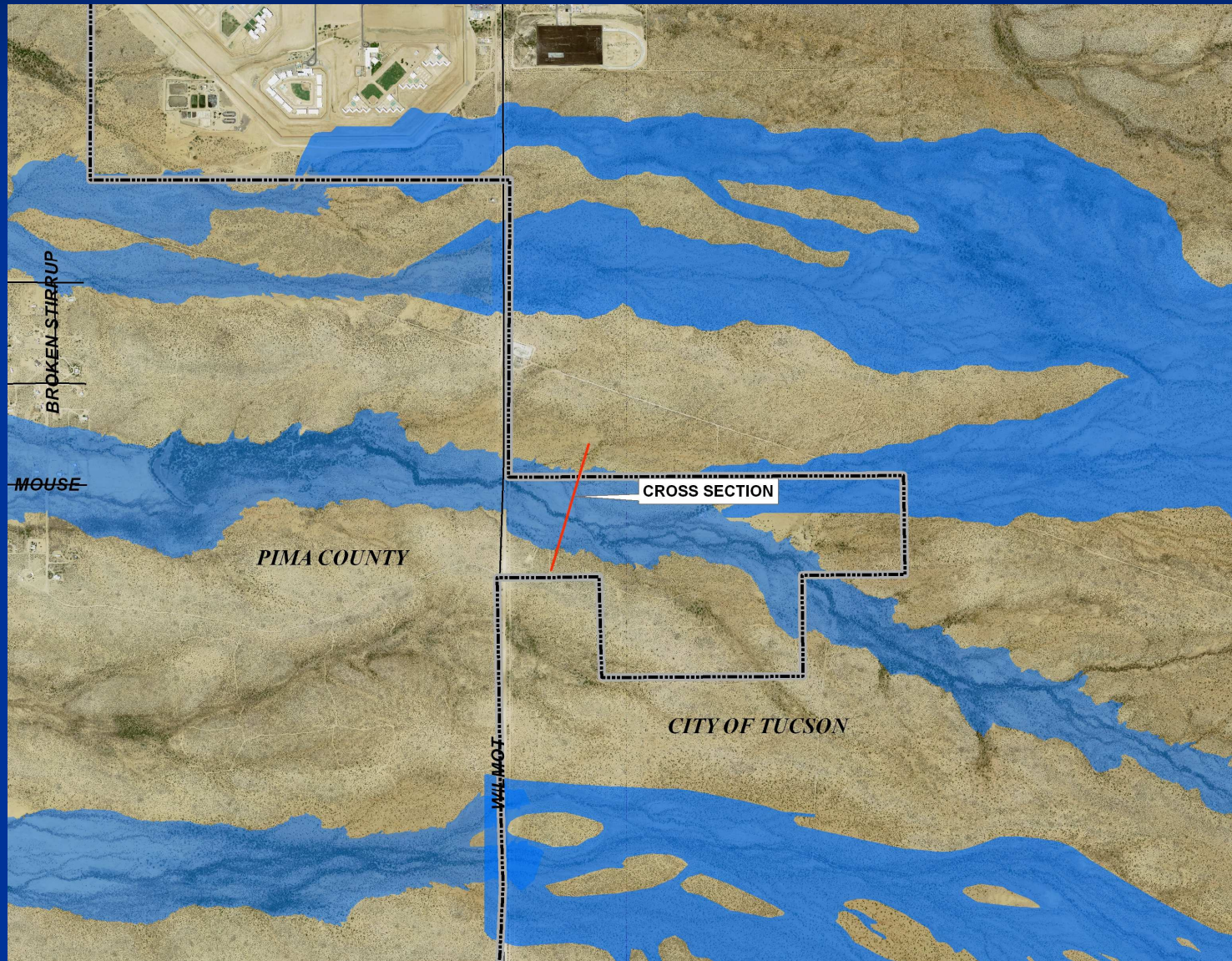
# LEE MOORE WASH BASIN MANAGEMENT STUDY

## FLOW CORRIDOR: AREA WIDE



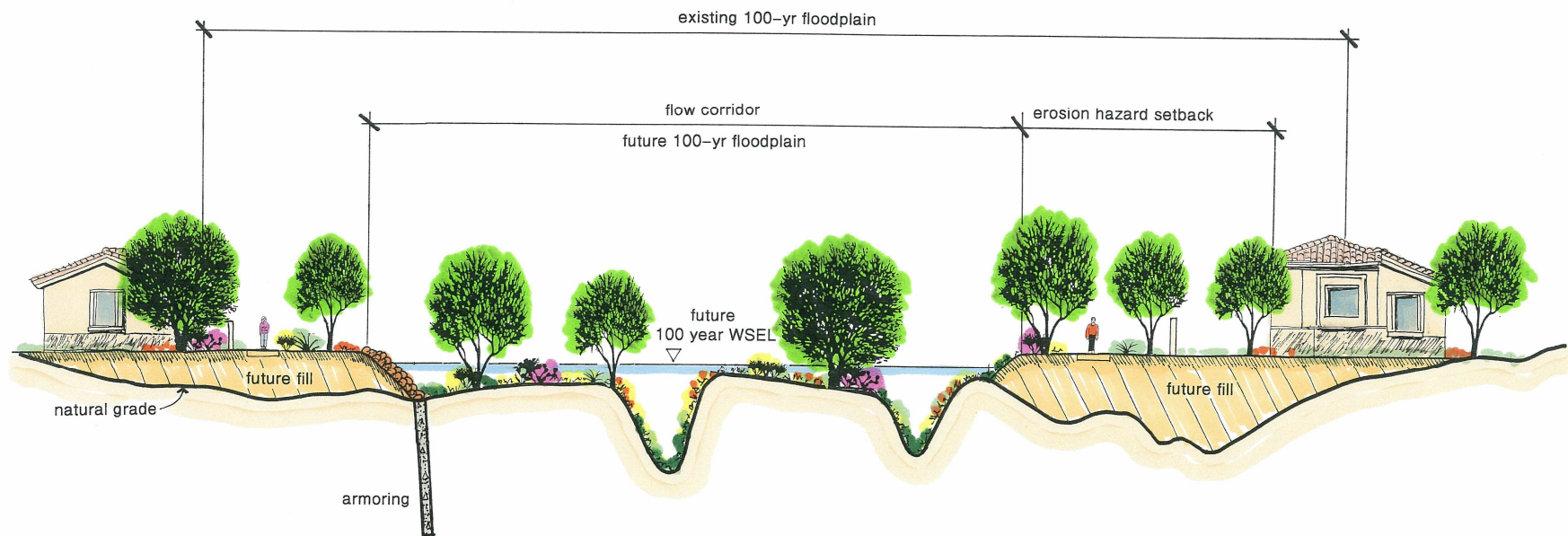
## LEE MOORE WASH BASIN MANAGEMENT STUDY

# ALTERNATIVES DESCRIPTION



## LEE MOORE WASH BASIN MANAGEMENT STUDY

# ALTERNATIVES DESCRIPTION

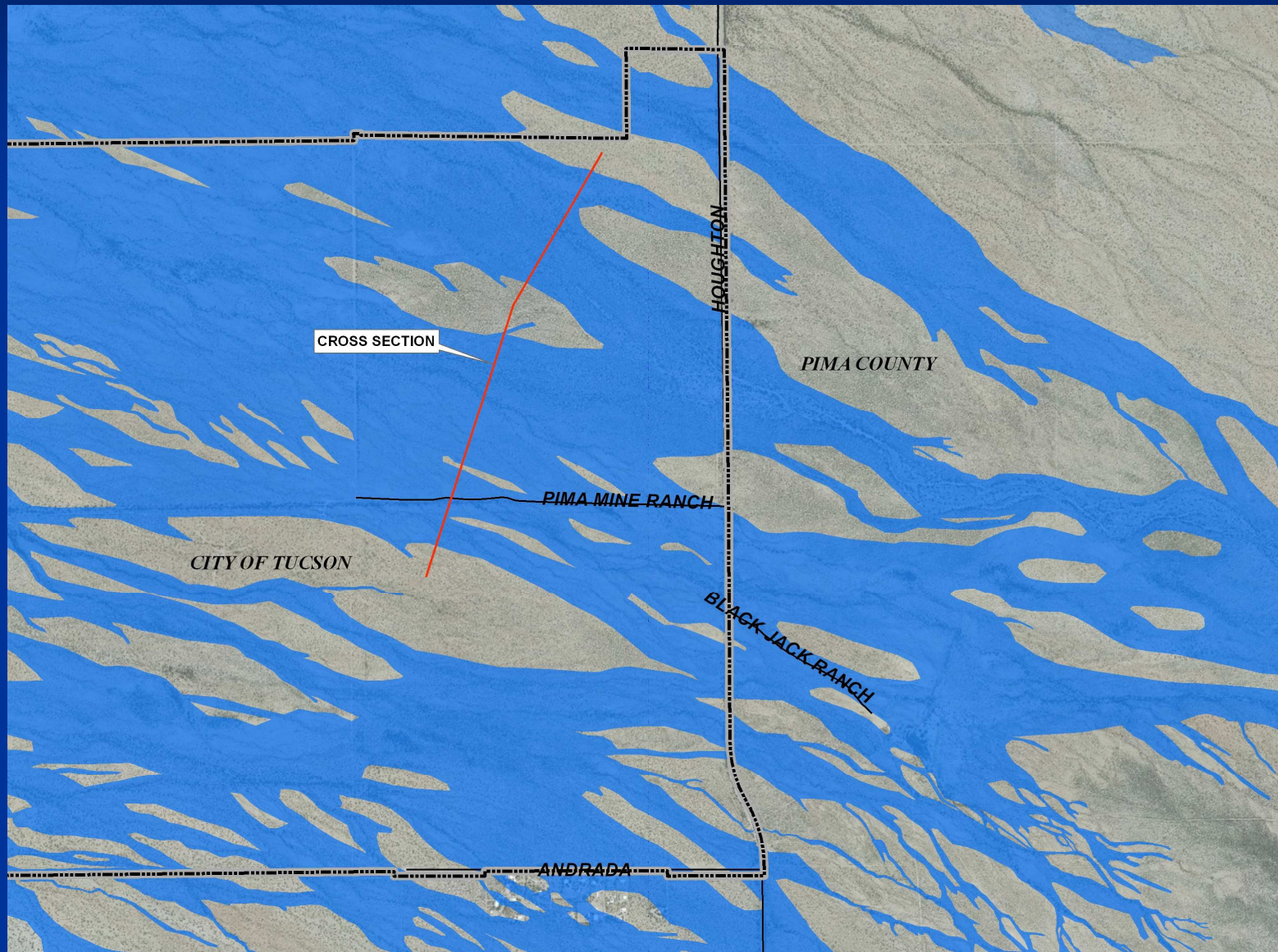


Flow Corridor Schematic for Riverine Areas (Franco Wash)

NTS

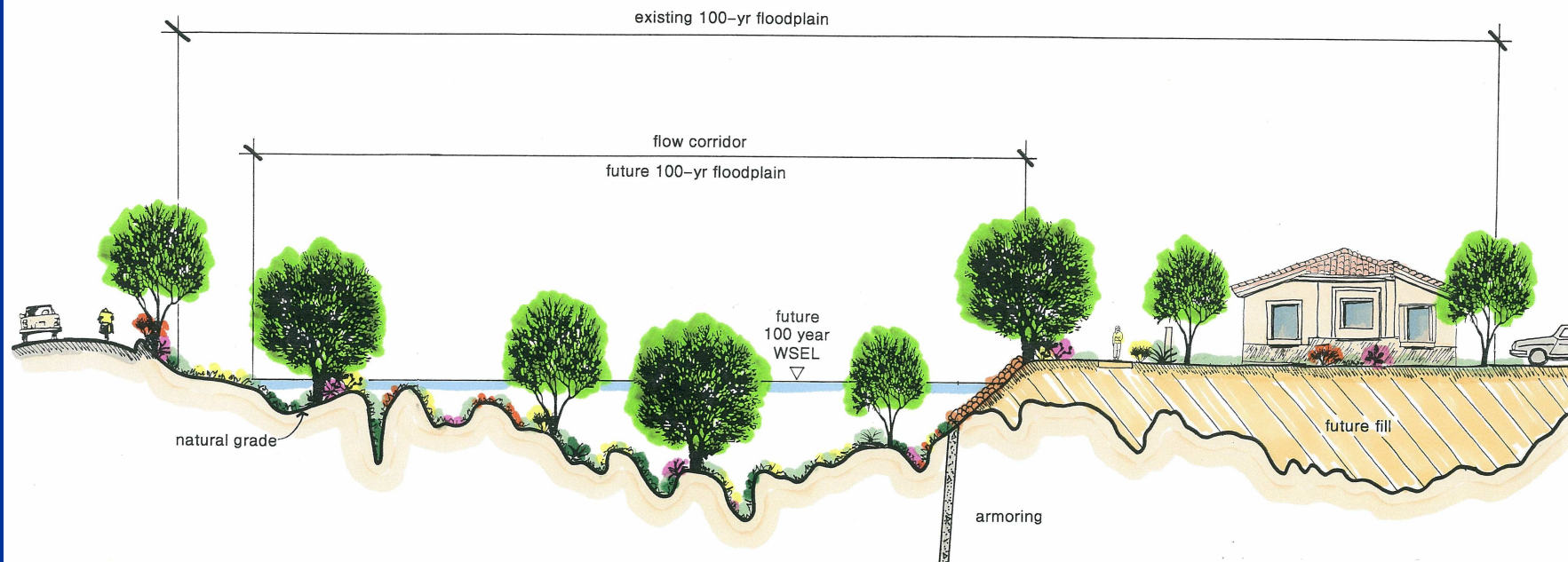
## LEE MOORE WASH BASIN MANAGEMENT STUDY

# ALTERNATIVES DESCRIPTION



## LEE MOORE WASH BASIN MANAGEMENT STUDY

# ALTERNATIVES DESCRIPTION



Flow Corridor Schematic for Distributary Flow Area (Cuprite Wash)

NTS

## DEVELOPMENT CRITERIA

- **Development Criteria**
  - Development Criteria for a watershed based planning study may be codified by reference in local government ordinances.
  - The Development Criteria establish technical criteria and establish rules & regulations for development within the watershed when it is determined that flood related hazards exist.
  - The Format is to provide a Rationale for the Criteria and then to explicitly state the Criteria.

## DEVELOPMENT CRITERIA EXAMPLES

- Riverine Flow
- Distributary Flow
- Flow Corridors
- Erosion Hazard Setbacks
- Road Crossings
- Utility Crossings
- Stock Ponds
- Detention/Retention Basins
- Water Harvesting



## LEE MOORE WASH BASIN MANAGEMENT STUDY

# DRAFT DEVELOPMENT CRITERIA EXAMPLE

## FLOW CORRIDOR

### RATIONALE:

Identification and preservation of Flow Corridors in the watershed prior to development will provide for a systematic drainage infrastructure that new development will follow thus minimizing future flood hazards. Flow Corridor preservation, in conjunction with other drainage and environmental ordinances, will minimize off-site impacts from a particular development by maintaining existing flow paths, optimizing system sediment balance and providing continuity for wildlife corridors.



## LEE MOORE WASH BASIN MANAGEMENT STUDY

# DRAFT DEVELOPMENT CRITERIA EXAMPLE

## FLOW CORRIDOR

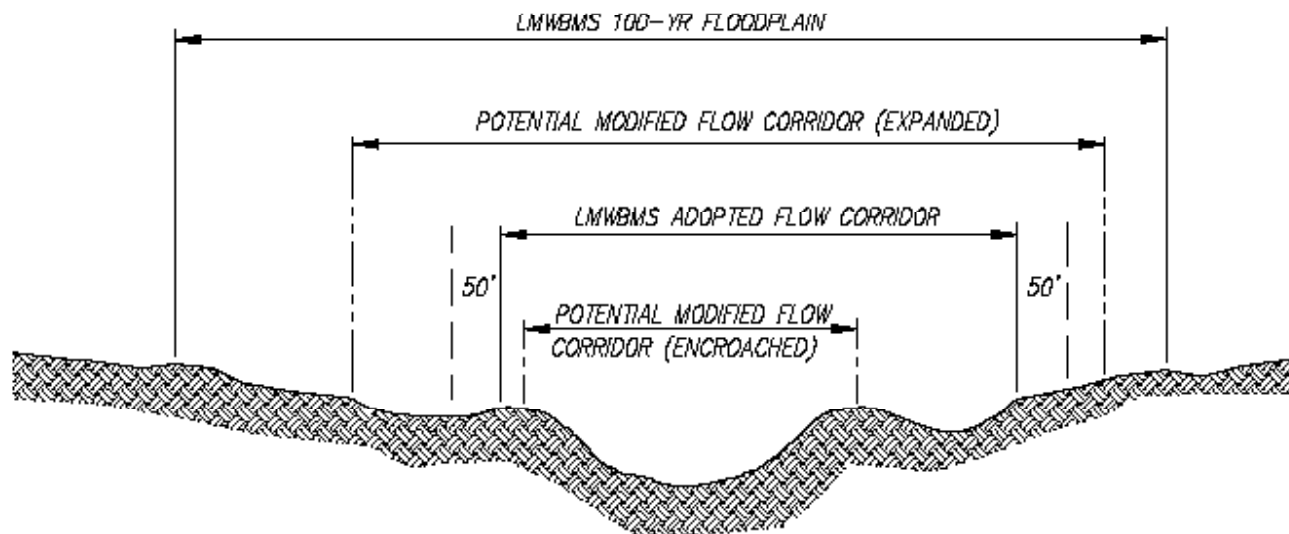
### CRITERIA:

Flow Corridors established and defined as part of the Lee Moore Wash Basin Management Study shall be maintained in their natural state except as described below.

Private and public development shall preserve the Flow Corridors identified in the Lee Moore Wash Basin Management Study to the fullest extent possible.

## LEE MOORE WASH BASIN MANAGEMENT STUDY

# FLOW CORRIDOR SCHEMATIC



**FLOW CORRIDOR SCHEMATIC  
LMWBMS ADOPTED VS POTENTIAL MODIFICATIONS  
BASED ON MORE DETAILED INFORMATION**

*N.T.S.*

**NOTE: A 50' RECREATION EASEMENT SHALL BE PROVIDED ON BOTH SIDES OF THE ADOPTED AND ANY POTENTIAL MODIFICATION.**



## LEE MOORE WASH BASIN MANAGEMENT STUDY

### **DRAFT DEVELOPMENT CRITERIA EXAMPLE**

### **EROSION HAZARD SETBACKS**

#### **RATIONALE:**

The one-third of the Study Area (primarily the northern portion) that is Riverine flow will continue to be addressed by the current City, county and Town floodplain management ordinances and regulations. However, the default erosion hazard setbacks are not representative of actual erosion concerns in Distributary Flow areas. Since more than two-thirds of the Study Area is inundated by distributary flow it is important that alternative safe erosion hazard setbacks be established.



## LEE MOORE WASH BASIN MANAGEMENT STUDY

### DEVELOPMENT CRITERIA EXAMPLE

#### EROSION HAZARD SETBACKS

##### CRITERIA:

➤ In the portion of the Study Area that contains Distributary Flow type flooding the following Criteria regarding Erosion Hazard Setbacks will be utilized :

▪ When the 100 year peak discharge of the watercourse is 500 cfs or less the following setbacks shall apply:

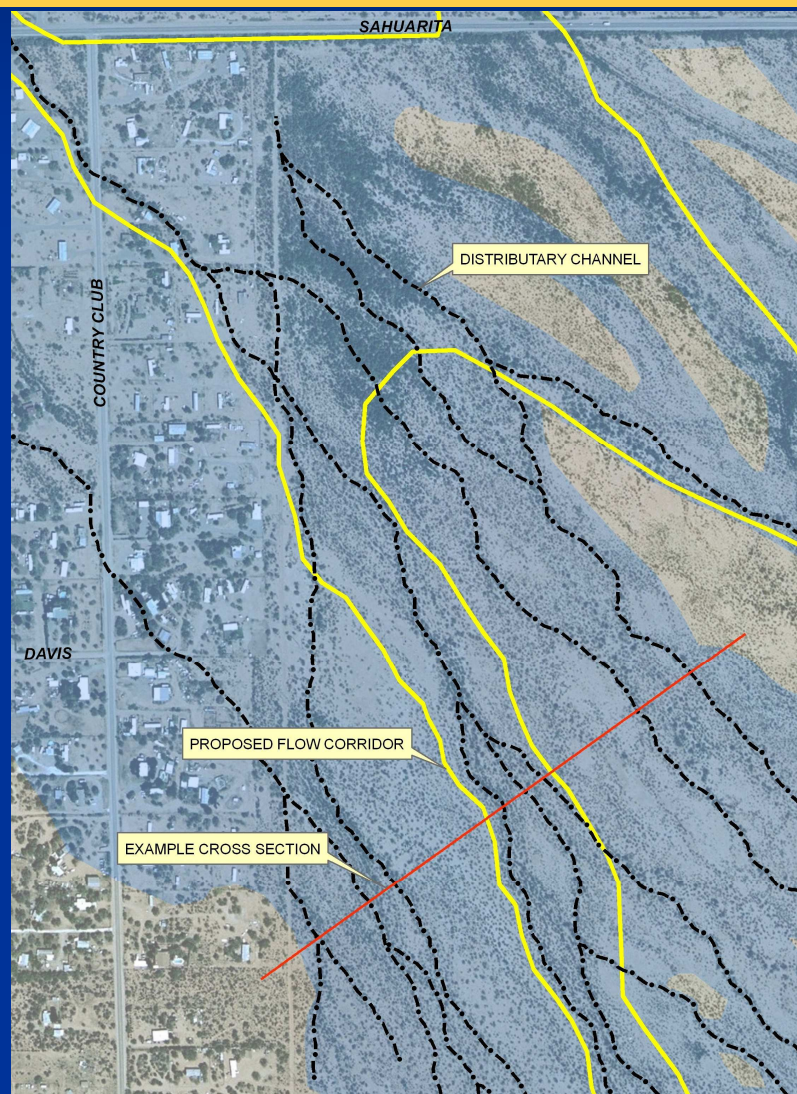
-For individual channels that exist but convey flows less than 100 cfs, the setback shall be 10 feet as measured from the edge of the channel or braid bank.

-For channels that can convey greater than 100 cfs, the setback shall be 25 feet as measured from the edge of the channel or braid bank.

## LEE MOORE WASH BASIN MANAGEMENT STUDY

### DRAFT DEVELOPMENT CRITERIA EXAMPLE

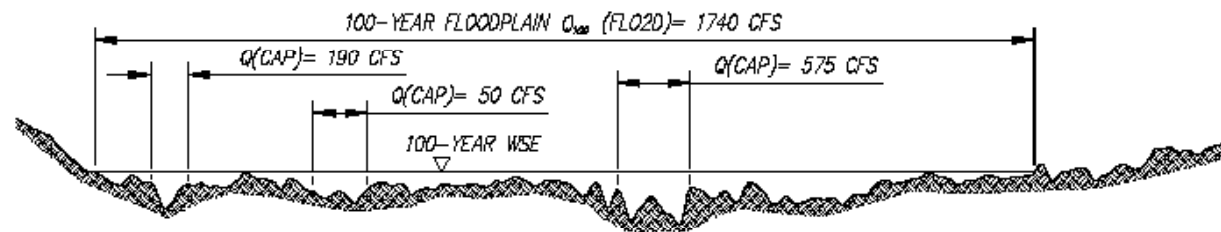
### EROSION HAZARD SETBACK



## LEE MOORE WASH BASIN MANAGEMENT STUDY

# DRAFT DEVELOPMENT CRITERIA EXAMPLE

## EROSION HAZARD SETBACK



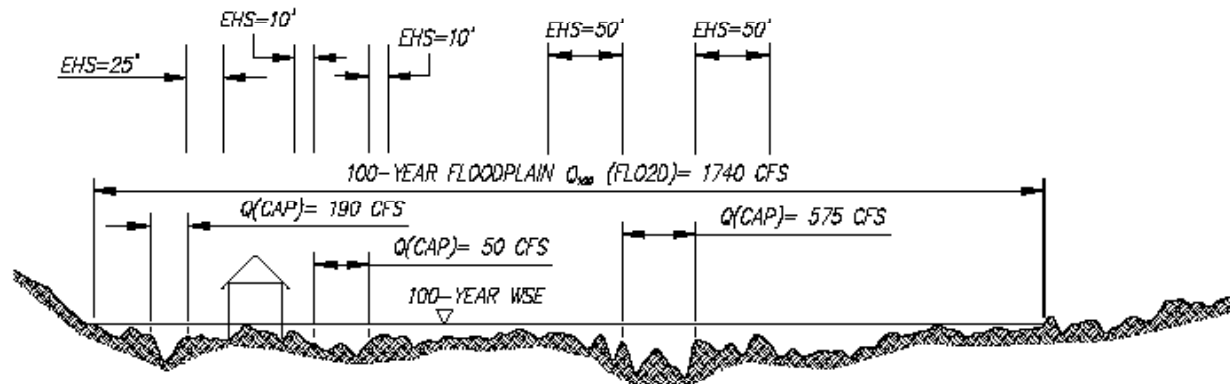
### EROSION HAZARD SETBACK CONCEPT DISTRIBUTARY FLOW CHANNELS

VERTICAL EXAG. 50:1  
N.T.S.

## LEE MOORE WASH BASIN MANAGEMENT STUDY

# DRAFT DEVELOPMENT CRITERIA EXAMPLE

## EROSION HAZARD SETBACK



### EROSION HAZARD SETBACK CONCEPT DISTRIBUTARY FLOW CHANNELS

VERTICAL EXAG: 50:1  
H.T.S.



## LEE MOORE WASH BASIN MANAGEMENT STUDY

### SCHEDULE

- |                                       |                                |
|---------------------------------------|--------------------------------|
| • Data Collection/Existing Conditions | June 2006 – April 2007         |
| • Hydrologic Analysis                 | September 2006 – December 2007 |
| • Hydraulic Analysis                  | January 2007 – March 2008      |
| • Geomorphic Analysis                 | January 2007 – February 2008   |
| • Alternatives Development            | February 2008 – September 2008 |
| • Recommended Alternatives            | September 2008 – November 2008 |
| • Development Criteria                | September 2008 – May 2009      |
| • Final Deliverables                  | May 2009                       |
| • Plan Adoption                       | 2009                           |



## NEXT STEPS

- **Structural Alternatives**

- Capital Improvement Programs
- Improvement Districts
- Bonds
- Developer Funded

- **Non-Structural Alternatives**

- Implemented by Adoption of City, County & Town
- Ordinances, Policies, Development Criteria

# DISCUSSION

